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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/842,136	04/26/2001	Sadakatsu Kumoi	9558-001-27	6550

7590 03/02/2004

Supervisor, Patent Prosecution Services
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EXAMINER	
NGUYEN, NGOC YEN M	
ART UNIT	**PAPER NUMBER**
1754	

DATE MAILED: 03/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

11

Office Action Summary	Application No.	Applicant(s)	
	09/842,136	KUMOI ET AL.	
	Examiner	Art Unit	
	Ngoc-Yen M. Nguyen	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) *11* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-10, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 0 619 268 in view Wold 6,290,927 and 5,026,535, optionally further in view Manning et al (5,000,858).

EP '268 discloses a process for the production of hydrogen chloride from chlorous waste material (I), comprising the following steps:

a. combustion of (I);

b. scrubbing the flue gas to produce crude acid (II);

c. treating the waste liquid partly accruing in the scrubber to produce residual waste with a high solid content and a solution (III) containing chloride;

d. recycling (III) to step a.

e. distilling (II) with an entrainer (IV) to produce HCl-rich gas (V) and remove impurities which are soluble in (IV);

f. optionally separating HF from (V);

g. drying (V) by adsorption and regenerating the adsorbent (VI), giving an aqueous concentrate which is passed to waste liquor treatment; and

h. working (IV) by evaporation of water and precipitation and filtration of impurities, the aqueous condensate being recycled to gas scrubber, while the filtered solids are passed to waste liquor treatment for recovery of chloride (note English abstract).

EP '268 further discloses that hydrazine can be added to the crude acid to remove the elemental chlorine before the distilling step (note column 6, lines 39-47). EP '268 also teaches that ammonium bisulfite or ammonium sulfite can be used (note column 3, lines 14-21).

The order of adding the reducing agent to the acid gas or solution is not seen as a patentable difference, as long as the reducing agent is capable of removing the elemental chlorine from the crude acid solution.

For claim 10, the step of liquefying the hydrogen chloride gas is known and conventional in the art, especially when such hydrogen chloride gas needs to be transported or stored because it would reduce the volume of the gas.

The difference is EP '268 does not disclose that oxidation-reduction potential of the crude acid, after adding the hydrazine and the automatic controlling.

Wold '927 discloses a process for removing iron and halogen coloring materials from hydrochloric acid, wherein a reducing agent is used to remove the halogens (chlorine and bromine) (note claim 1). Wold '927 teaches the level of halogens in the final hydrochloric acid is desired to be lower than 1 ppm (note Example 2, column 3, lines 48-50).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to optimize the amount of reducing agent added to the process of

WP '268 in order to reduce the halogen content, including chlorine, to a level lower than 1 ppm as taught by Wold '927. By doing so, the oxidation-reduction potential of the solution in the combined teaching would inherently be lower than 900 mV as required in the instant claim.

(As disclosed in the instant specification, the oxidation-reduction potential is adjusted by adding hydrazine or analogous compound in order to facilitate the removal of elemental chlorine from the crude hydrogen chloride aqueous solution. In EP '268, hydrazine is also added for the same purpose).

For the automatic controlling step, Jonsson '535 discloses a process for decoloring sulfuric acid by adding hydrogen peroxide (note claim 1). Jonsson '535 further discloses that the hydrogen peroxide addition is advantageously controlled automatically with respect to the acid produced. Thus, it is possible to monitor the coloring effect continuously, and therewith determine the amount of peroxide that needs to be added (note column 2, lines 63-68).

Even though Jonsson' 535 discloses a process for decoloring sulfuric acid, not hydrochloric acid as in the process of EP '268, however, both processes are dealing decoloring an acid by adding a chemical compound, thus, they are considered as analogous art in this respect.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made continuously and automatically control the amount of the reducing agent used in the process of EP '268 as suggested by Jonsson '535 because by doing so the amount of reducing agent can be controlled.

Optionally, Manning '858 can be applied to teach that the amount of reducing agent to be added to a process can be controlled by measuring and monitoring the oxidation-reduction potential (note column 6, lines 61-67).

Applicant's arguments with respect to claims 1-10, 12 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
February 23, 2004